

IN THE CLAIMS:

1. (Original) A light emission apparatus comprising:
a substrate that dissipates heat;
an insulation film that covers a main surface of the substrate;
a metal wiring pattern provided on the insulation film;
a light emission chip that is mounted above the insulation film, is connected to the metal wiring pattern, and emits light having a peak wavelength in a range of 250 nm to 480 nm inclusive; and
a light reflective layer that is made of particles of metal oxide and is provided at any place that has the insulation film thereunder, but not light emitting surface of the light emission chip thereunder.
2. (Original) The light emission apparatus of Claim 1, wherein
the particles of metal oxide have an average particle diameter of 0.50 μ m or below.
3. (Previously Presented) The light emission apparatus of Claim 1, wherein
the metal oxide is selected from the group consisting of Al₂O₃ and ZnO.
4. (Original) The light emission apparatus of Claim 1, wherein
the light emission chip is made of either a resonant light emitting diode or a vertical-cavity surface-emitting laser element.

5. (Original) The light emission apparatus of Claim 1, wherein
a thread hole and a groove are provided with respect to the substrate in a position
where the light emission chip is provided in a plan view, the groove being to absorb distortion
which occurs when the substrate expands due to heat.
6. (Original) The light emission apparatus of Claim 1, further comprising a covering
member that covers the light emission chip and is made from: a glass substrate; and a phosphor
layer that is provided on a main surface of the glass substrate facing the light emission chip and
that is excited by light emitted from the light emission chip thereby emitting excitation light.
7. (Original) The light emission apparatus of Claim 6, wherein
the light emission chip is made to abut against the phosphor layer.
8. (Original) The light emission apparatus of Claim 6, wherein
the phosphor layer is made of either: a composition that emits white excitation
light by being excited by the light emitted from the light emission chip; or a composition that
emits such excitation light that, when synthesized with the light from the light emitting chip,
yields white light.
9. (Original) The light emission apparatus of Claim 6, wherein
the glass substrate of the covering member is fitted into a metal frame that is fixed
to the substrate by means of welding.
10. (Previously Presented) The light emission apparatus of Claim 2, wherein
the metal oxide is selected from the group consisting of Al_2O_3 and ZnO .

11. (Previously Presented) A light emission apparatus comprising:
 - a substrate,
 - an insulation film that covers a main surface of the substrate;
 - a wiring pattern provided on the insulation film;
 - an array of light emission chips that are mounted above the insulation film, and connected to the wiring pattern, to emit light having a wavelength in the ultra violet range;
 - a phosphor layer operatively positioned relative to the light emission chips and response to the ultra-violet wavelength range to emit a white light; and
 - a light reflective layer that includes particles of metal oxide above the insulation film and surrounding the light emitting surfaces of the light emission chips.
12. (Previously Presented) The light emission apparatus of Claim 11, wherein the light emission chips are made of one of a resonant light emitting diode and a vertical-cavity surface-emitting laser element.
13. (New) The light emission apparatus of Claim 12, wherein the particles of metal oxide have an average particle diameter of 0.50 μm or below.
14. (New) A light emission apparatus comprising:
 - a substrate that dissipates heat;
 - an insulation film that covers a main surface of the substrate;
 - a metal wiring pattern provided on the insulation film;

a light emission chip that is mounted above the insulation film, is connected to the metal wiring pattern, and emits light having a peak wavelength in a range of 250 nm to 480 nm inclusive; and

a light reflective layer that is made of particles of metal oxide and is provided at any place that has the insulation film thereunder, but not light emitting surface of the light emission chip thereunder, wherein

a thread hold and a groove are provided with respect to the substrate in a position where the light emission chip is provided in a plan view, the groove being to absorb distortion which occurs when the substrate expands due to heat.

15. (New) The light emission apparatus of Claim 14, wherein
the particles of metal oxide have an average particle diameter of 0.50 μm or below.

16. (New) The light emission apparatus of Claim 15, wherein
the metal oxide is selected from the group consisting of Al_2O_3 and ZnO .

17. (New) The light emission apparatus of Claim 14, wherein
the light emission chip is made of either a resonant light emitting diode or a vertical-cavity surface-emitting laser element.

18. (New) A light emission apparatus comprising:
- a substrate that dissipates heat;
 - an insulation film that covers a main surface of the substrate;
 - a metal wiring pattern provided on the insulation film;
 - a light emission chip that is mounted above the insulation film, is connected to the metal wiring pattern, and emits light having a peak wavelength in a range of 250 nm to 480 nm inclusive;
 - a light reflective layer that is made of particles of metal oxide and is provided at any place that has the insulation film thereunder, but not light emitting surface of the light emission chip thereunder;
 - a covering member that covers the light emission chip and is made from: a glass substrate; and
 - a phosphor layer that is provided on a main surface of the glass substrate facing the light emission chip and that is excited by light emitted from the light emission chip thereby emitting excitation light, wherein the glass substrate of the covering member is fitted into a metal frame that is fixed to the substrate by means of welding.
19. (New) The light emission apparatus of Claim 18, wherein
- the particles of metal oxide have an average particle diameter of 0.50 μm or below.
20. (New) The light emission apparatus of Claim 18, wherein
- the metal oxide is selected from the group consisting of Al_2O_3 and ZnO .